

And though the U.S. conducted high-altitude test explosions in the late 1950s and early 1960s, it could properly claim to have fired an "operational" nuclear missile only once—in 1962. (Static firings and component tests have proved to the U.S. that its warheads work.)

Was the Chinese launching a test of an operational system? The official communiqué was opaque on all the essential details of warhead size and yield as well as the kind of missile used. In a matter of days, however, the U.S. intelligence network will have scooped up fallout from the test and analyzed it to determine precisely what happened at Hsuangtchengtzu. The radioactive particles from the explosion, for example, will reveal something of the compactness and design of the warhead, and from these figures analysts can work

ance systems, and build the air frames. An iron-and-steel complex at Chiuchan, may conceal a missile plant, and at Sian there is a jet-engine factory which could produce propulsion systems. Secretary of Defense McNamara apparently had the SS model in mind last year when he noted that the Chinese "appear to be making an intensive effort to develop a medium-range ballistic missile which possibly could become operational as early as 1967."

Surprises: President Johnson appeared to go along part of the way with the doubters. In Kuala Lumpur last weekend during his Malaysian stopover, Mr. Johnson was skeptical that "the Chinese did all they say they did." He also reminded listeners that the "U.S. can knock down anything they can send up."

But the significance of the latest test



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Range finder: Ex-USAF Colonel Ch'ien helped extend Peking's nuclear reach

backward to estimate the size and perhaps thrust of the missile used.

The most informed guess is that the Chinese do not have an operational system in any way comparable to the U.S. Polaris and Minuteman missiles which can be fired within a matter of seconds. Indeed, some cynics are inclined to discount Chinese claims in large part ("The test is 99 per cent psychological warfare and 1 per cent hardware," one British military source declared). These doubters argue the vehicle may have been a winged craft like the German V-1 "buzz bomb" or even a subsonic drone ship.

Some Pentagon sources countered that the missile used was similar to—if not one of—the Soviet SS series which Russia gave to China before the Sino-Soviet split. These 1957 vintage liquid-fueled vehicles evolved from the German V-2 rockets; they are about 60 feet long, 5 to 6 feet in diameter and have a range of 1,000 miles. The Chinese had ample time to copy Soviet propulsion and guid-

lies not so much in the delivery vehicle used as in the fact that the Chinese apparently know how to package a nuclear weapon in small sizes. It was the second time in less than a year that a Chinese test contained an ominous surprise for the West; just last May, China exploded an A-bomb with quantities of thermonuclear (H-bomb) material.

Much of Chinese progress can be traced to Soviet help, now discontinued. But the Russians are not solely responsible for putting China on trajectory. A major figure in Chinese missile development is 57-year-old Dr. Ch'ien Hsueh-shen, a former professor of jet propulsion at Caltech.

During World War II, Ch'ien held the rank of colonel in the U.S. Army Air Force. In 1945 he went to Germany with a U.S. mission to study the V-2 program. But after a trip to China, and an effort to ship a library of unclassified technical papers to Hong Kong in the 1950s, the U.S. tried to deport

Fireball Over Lop Nor

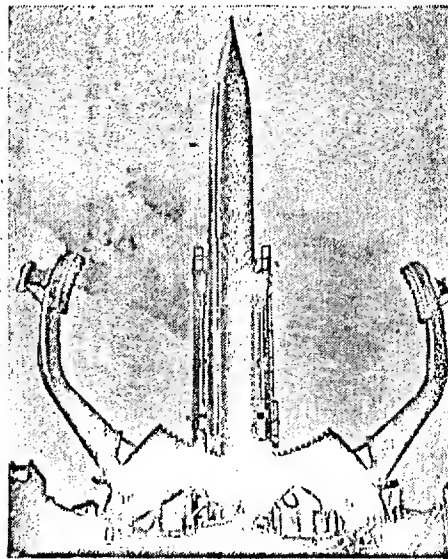
It was a scene that had unfolded no more than half a dozen times in the history of weaponry: at the Hsuangtchengtzu test range 25 miles northwest of the big Red Chinese air base in Chiuchan, Sinkiang Province, one day last week, a fueled missile carrying a nuclear warhead roared across the desert to a target zone some 400 miles northeast, near the salt marshes of Lop Nor.

A blinding fireball, a ground-shaking roar and, finally, the distinctive mushroom cloud took shape—signifying that Red Chinese scientists had succeeded in matching missile technology with the theoretical physics of small "deliverable" nuclear warheads. Only the United States and the Soviet Union had ever fired a live nuclear-tipped rocket before.

him. Then, reversing itself, the government tried to hold him, and finally freed him. Ch'ien left for China in 1955.

Strategically it is clear why Chairman Mao welcomed Ch'ien's know-how. To be sure, the Chinese nuclear threat to the continental U.S. is still small. Even if an ICBM program is now under way, it would not become operational for more than a decade. But if the Chinese aim is to extend its control in Asia and make the U.S. unwelcome, just a half-dozen missile-warhead systems like the one tested last week would be useful to intimidate those Southeast Asian capitals within range (map). Secretary McNamara estimates that the Chinese will be able to deploy several IRBM's by 1968 or 1969.

The Lop Nor explosion also takes dead aim on the treaty to limit the



Soviet SS missile: China's pattern?

spread of nuclear weapons. India, attacked twice by China in the last four years, feels the heat from last week's blast and may decide to "go nuclear." Japan, too, is being drawn inevitably along the road to nuclear weapons. Probably both nations could have nuclear weapons within a year of a decision to go ahead.